**Activity 1.1: How AI Learns — Shape-to-Colour Mapping**

**Objective**

To give participants a hands-on experience of how AI systems learn patterns from examples and feedback.  
Participants will simulate training an AI to **predict colours for shapes**, learning through repeated feedback from team members.

**Materials Needed**

* Activity Worksheet (1 per group) with a sheet of shapes with the same colour.
* Pens or pencils
* Whiteboard or flipchart (optional, for facilitator to explain learning concepts throughout)

**Setup**

1. Print out the **prepared sheet of** shapes (circle, triangle, square, star) — all shown in the same colour.
2. Facilitator should secretly choose a **colour-mapping** from shapes → colours:
   * Circle → Red
   * Triangle → Blue
   * Square → Green
   * Diamond → Purple
   * Star → Yellow
3. Participants will act as the **AI system**, trying to guess the “hidden colour” for each shape. Trainers in the team will give **Correct / Incorrect** feedback.

**Instructions**

**Phase 1: Training (Learning from Examples) ~ 5-8 minutes**

1. Split participants into small groups (2-3 people) and provide each group with the sheet.
2. One participant in each group acts as the **AI system**, others act as **trainers**.
3. The AI goes through the shapes **one at a time**, guessing which colour each shape should be.
4. Trainers provide **feedback** immediately: “Correct” or “Incorrect.”
5. The AI adjusts guesses based on previous feedback and tries to identify the hidden mapping.
6. Continue for about 5-8 minutes.

**Phase 2: Testing (Applying What’s Learned) ~6 minutes**

1. The facilitator will now show the shapes to all the groups.
2. Groups will compete against each other to see who can say the right colour for each shape, the fastest.
3. Record predictions and track accuracy (number of correct guesses).

| **Shape** |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

**Phase 3: Reflection ~5 minutes**

* Group Discussion Questions :
  + How did feedback help the AI improve?
  + How many examples were needed before the AI guessed correctly consistently?
  + How is this similar to real AI training with labelled data?
  + What could happen if the “training data” had errors?

**Key Take-away:**

AI systems don’t understand meaning; they detect patterns and adjust internal rules through repeated examples and feedback. Correct and sufficient training data is key to accuracy.

This activity demonstrates the **core principle of machine learning**: AI learns patterns from data through training and feedback. It improves over time, but only within the scope of the patterns it has seen — it doesn’t understand “why” the mapping exists